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Don't close the book on print:

Mid-term return on investment of print books purchased under different acquisition modes

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The Claremont Colleges Library



- Single academic library serving seven contiguously located academic institutions
- Primarily teaching-focused, with low to medium research activity
- Close to 900,000 print books in the main Library building
- ~45,000 print books in an offsite storage



Why research print books?



The traditional place of the print book in libraries is under question

- Financial pressures from declining budgets and need to fund other types of materials resources
- Space constraints and pressures to reallocate space in library buildings
- Need to continue adding print books to the collection, in what disciplines, and how to we best acquire them?
- Question regarding the purpose of print book collecting: for supporting current usage or for preserving the scholarly record



Why research print books:

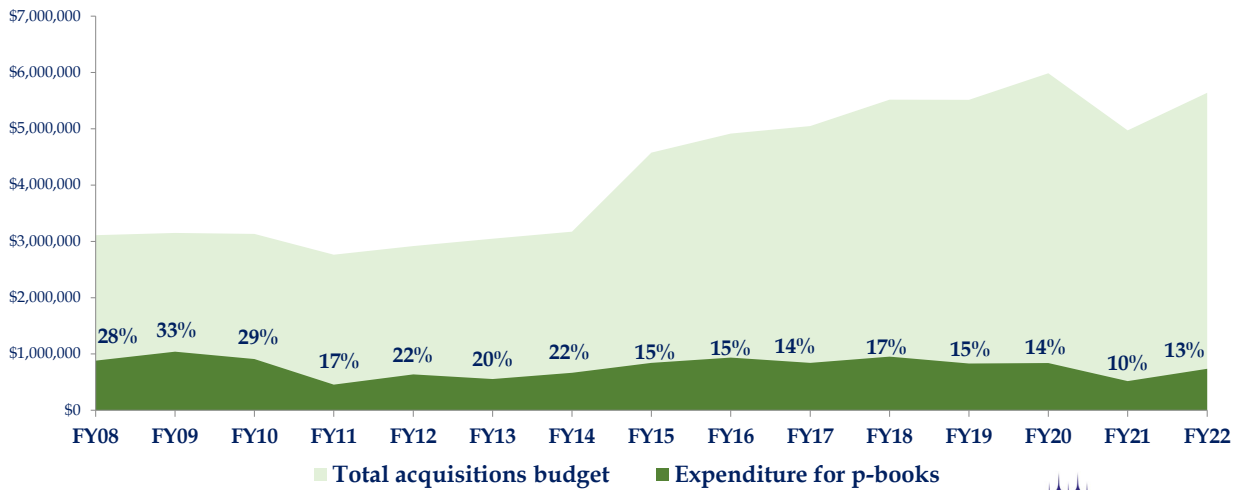
For the majority of the history of libraries, the value of the print book has never been questioned. The book was the thing libraries were all about.

Now with the evolution of scholarly communications and research, library collections are adjusting too.

A lot of the current research, promotion, and advocacy in library collections has been focused on e-resources. But print books are stubbornly refusing to go away! We do however have to ask a variety of questions – both very concrete and measurable, and more philosophical ones:

- What makes a print book valuable? How do we measure this value?
- How much of our precious financial and space resources is appropriate to devote to print books?
- And if we shall continue to build print book collections, how big, in which disciplines, and what is the best way to acquire the books?
- Do we collect for usage or for posterity? And how long are we willing to wait for a book to demonstrate enough value?

Fact: Funding for print books has been declining as proportion of total acquisitions budget



Let's look at the context in which we are investigating these questions:

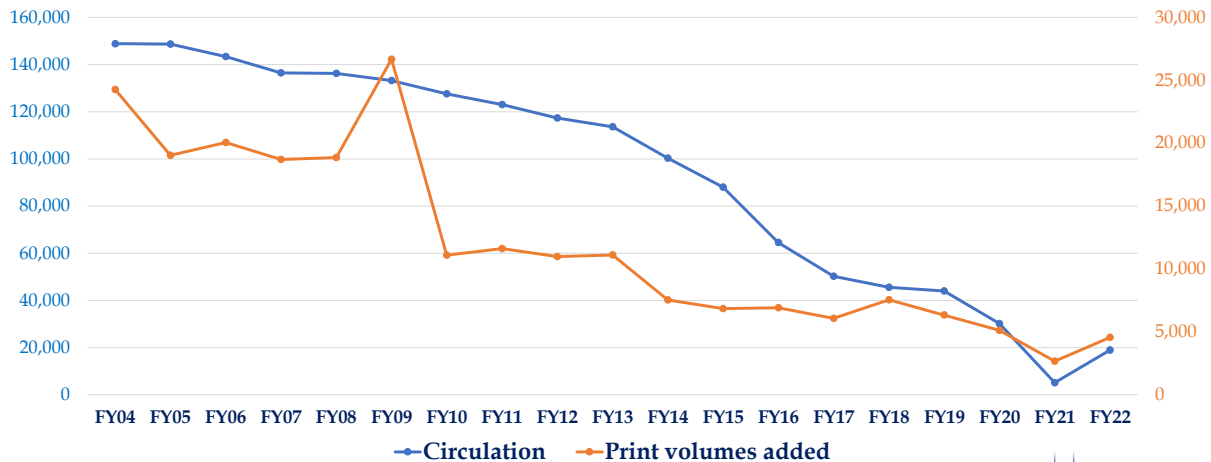
Fact: funding for print books has been declining as a proportion of total acquisitions budget.

Before the Global Financial crisis of 2008/2009, as much as 1/3 of the acquisition budget went to print books, now it is down to 13%.

Every time budgets need to be cut, the first place to go is print books. That is in addition to the steady erosion of all types of discretionary funding in order to keep up with subscription inflation.

What is more, we are not even spending the full appropriation - often leftover print book money gets swept at year-end for one-time e-purchases.

Decline in both number of print books added per year and total print book circulation



This chart juxtaposes the circulation stats for the last 18 years - in blue - to the numbers of print book volumes added - in orange.

While the growth of the print book collection has slowed down significantly, given the lack of any major deaccessioning, the collection overall keeps growing - with slower rates, but the total number of available volumes is consistently higher.

However, circulation rates are steadily declining. We could see some stabilizing around FY17-FY19 before the serious dip caused by the Pandemic and it is too early to say if circulation rates will recover back to FY19 levels or will continue to decline. So, basically, we know the value today will not be as good as it was 20 years ago, but is it still good enough?

The study - ROI on print books purchased under different acquisition modes

- **Stage 1: 2017** - Short-term
 - 8025 titles (all new print books purchased between Jul 1, 2015 and Sep 30, 2016)
 - Usage within the first year after purchase of each book (data from Jul 1, 2015 to Sep 30, 2017)
- **Stage 2: 2023** - Mid-term
 - Expanded the dataset to 13,640 titles (all new print books purchased between Jul 1, 2015 and Aug 31, 2017)
 - Usage within five years after purchase (data from Jul 1, 2015 to Aug 31, 2022)



We have been preoccupied with these important questions for a while. Back in the distant 2017, we designed a study to try and understand what factors influence circulation of newly purchased print books.

That first stage of the study looked at short term trends. We studied a little over 8000 titles purchased within a little over a year and their usage within the first year after their purchase. Since the circ data comes with a timestamp, we were able to calculate the time between acquisition date and event date and for each title, and we only used its individual first 365 days of circ data.

The reason why we could not go further back with a bigger sample, was that our previous ILS was not collecting circulations with a timestamp, so would only use books purchased after we migrated to WMS.

At the end of that study, we promised to come back in 5 years and look at mid-term trends, so here we are.

For stage 2 we were able to expand the set of titles to 13,640 by adding an almost whole another year worth of acquisitions. Again, for each individual title we calculated the time from acquisition to event and only used circulations within each title's individual first 5 years.

And we looked at some trends in changes from short to mid-term.

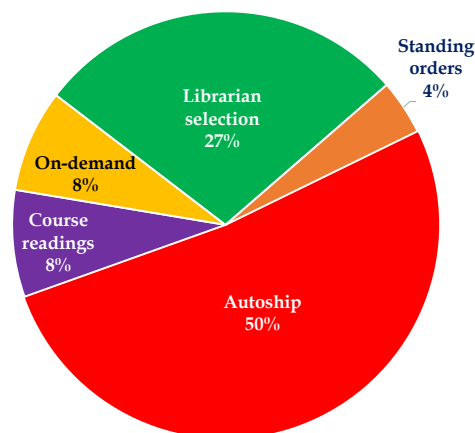
The study - mid-term ROI on print books

Data is analyzed per:

- 5 acquisition modes (Autoship, Standing orders, On-demand, Course readings, Librarian selection)
- 3 disciplines (AH, SS, and STEM)



- *Usage* includes checkouts, renewals, and soft checkouts (i.e. internal usage)



We sliced and diced the data several different ways with the most important analyses performed per acquisition mode.

Some disclaimers:

Titles requested by faculty, students, or other users are tracked and purchased on separate budget funds in our library that we call “On-demand”.

In our budget, course readings are technically “on-demand” orders, but for the purpose of this study, we did our best to identify them and pull them out in their own acquisition mode because we thought them being course readings would certainly influence their circulation patterns.

Print course readings are only purchased if the assigned title is not available as an e-book.

It is important to note that Acquisition mode reflects only the way the book was first acquired. Some autoship and librarian selection items could (and do!) become course readings after they are already in the stacks.

We also looked at the data per discipline. Some of these results are included here as well.

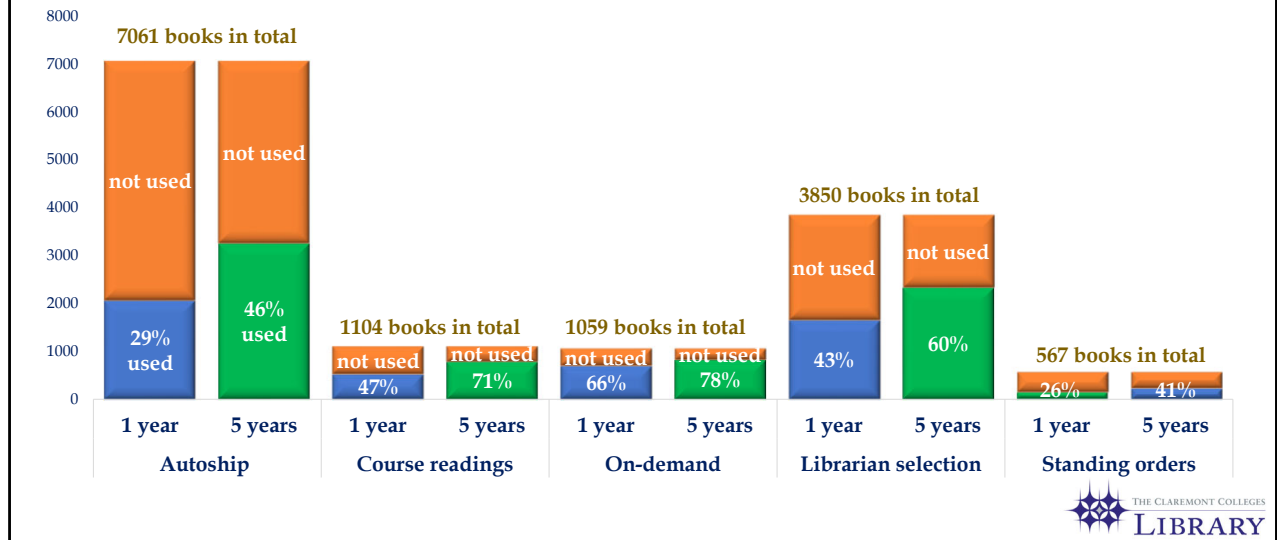
In the first study we looked at and compared different types of usage, but this time we summed up all types together, so when I talk about usage, that includes checkouts, renewals, and soft checkouts i.e. OCLC’s term for internal usage.

Later in highlights I’ll point some interesting findings regarding soft checkouts.

Stage 2: Updated study research questions

1. What proportion of new p-books has at least one use during the study period? How does short term compare to mid-term?
2. How long does it take for a p-book to circulate for the first time within the study period?
3. What is the turnover of print books? Does usage increase, decrease, or maintain steady over time?
4. What is the cost per use of p-books? How does it change from short term to mid-term?

Q1: What proportion of newly purchased print books had at least one use?

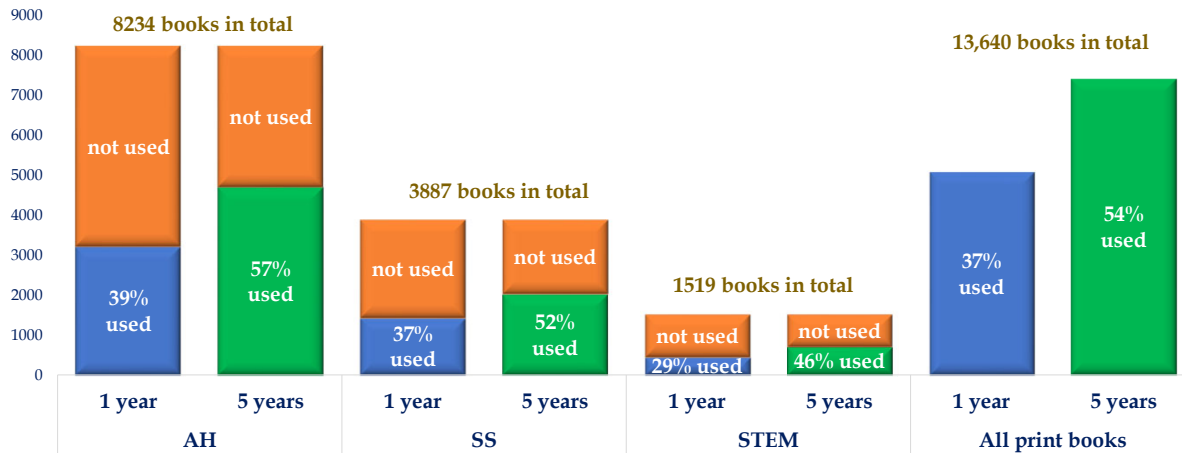


The height of the bars reflects the actual number of titles per acquisition modes. For example, we've had the most books purchased via autoship. Within each acq mode, we have specified the percentages of books with at least one use within year one - blue bars, and all 5 years - green bars.

Not surprisingly, course readings and on-demand have the highest proportion of all available titles showing usage.

Though, not too shabby for our librarian selected titles.

Q1: What proportion of newly purchased print books had at least one use?

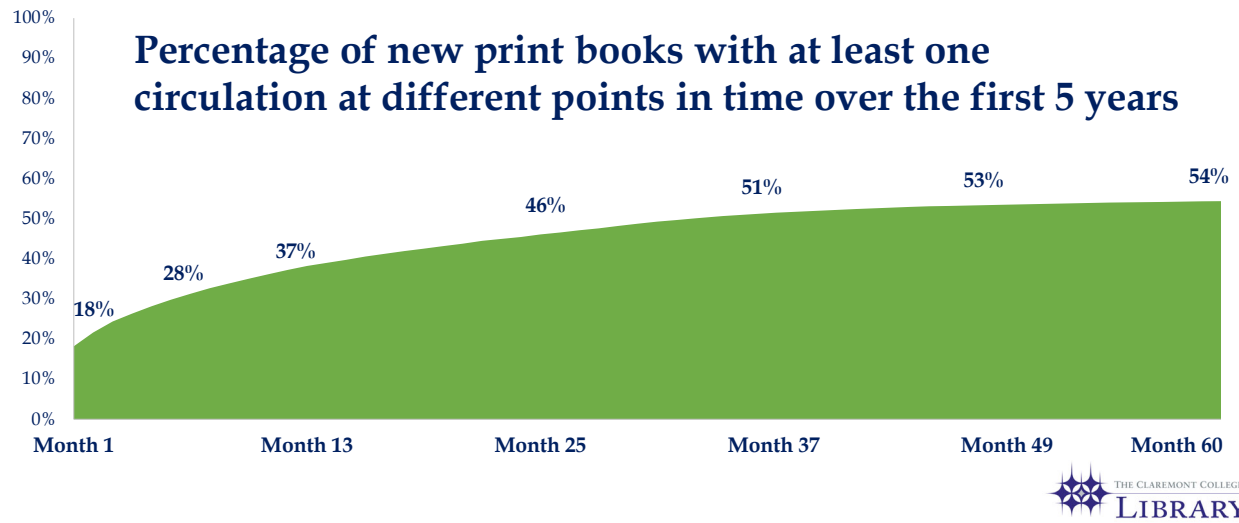


Same analysis by discipline - most notably showing how predominant arts and humanities discipline is when it comes to print books. The portion that had registered usage in AH is in line with the average for all books.

I'd like to talk about the significance of the 37% overall of titles used within the first year, going up to over half in 5 years. We know from the literature that depending on the library type and the size of the collection, anywhere between 40% and 60% of print books never get touched for their entire shelf-life.

So I found the fact that more than half of our sample had already escaped that fate after only 5 years very encouraging and a sign we are doing something right.

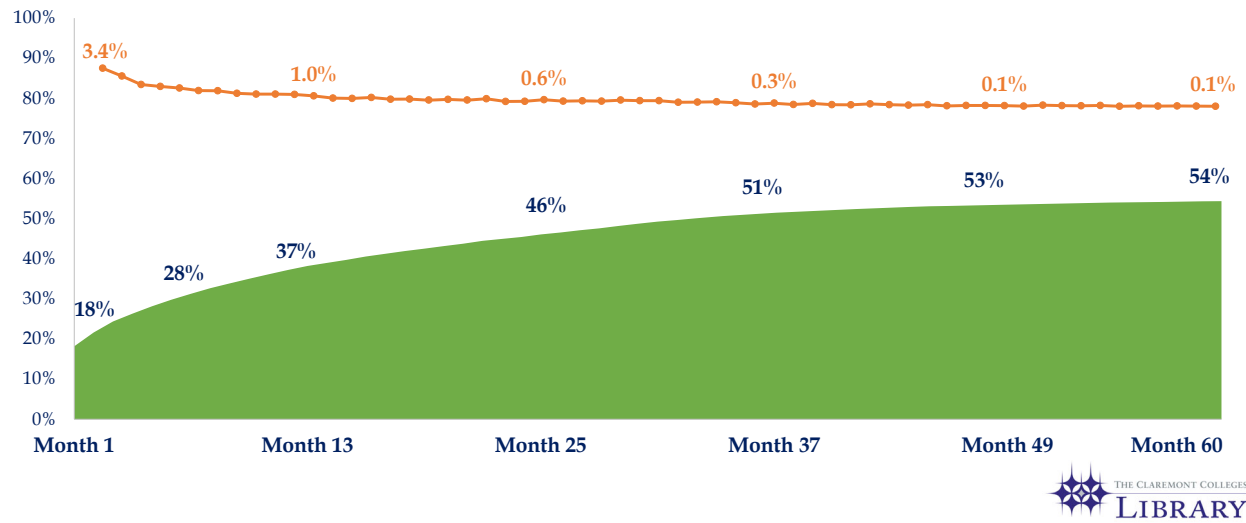
Q2: How long did it take for the new print books to circulate for the first time?



Moving on to question 2

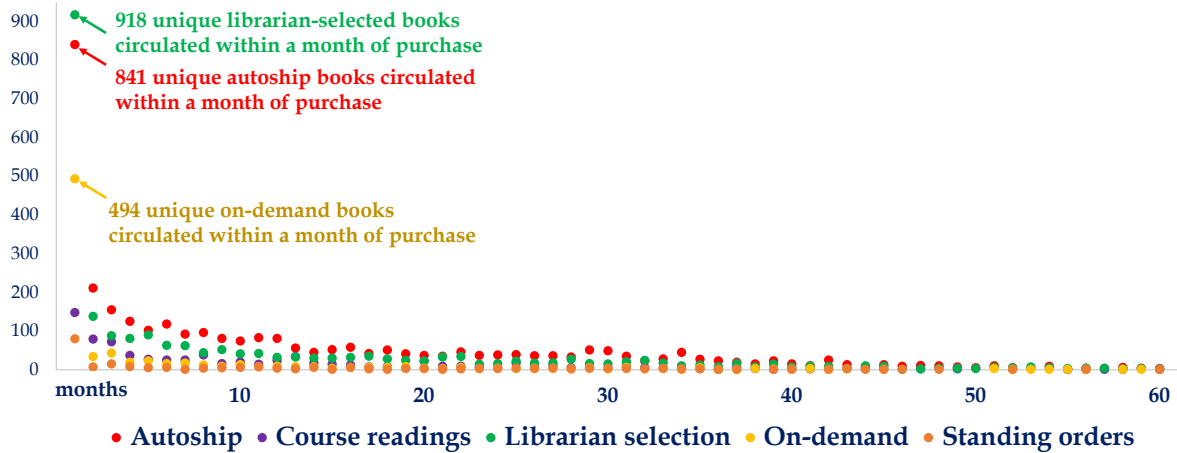
This chart shows the percentage of all new p-books with at least one circulation at various points in time within the first 5 years.

Q2: How long did it take for the new print books to circulate for the first time?



We see 18% had already circulated by the end of the first month. The increase slows down with time and almost plateaus after year 3.

Q2: How long did it take for the books to circulate for the first time – per acq. mode?

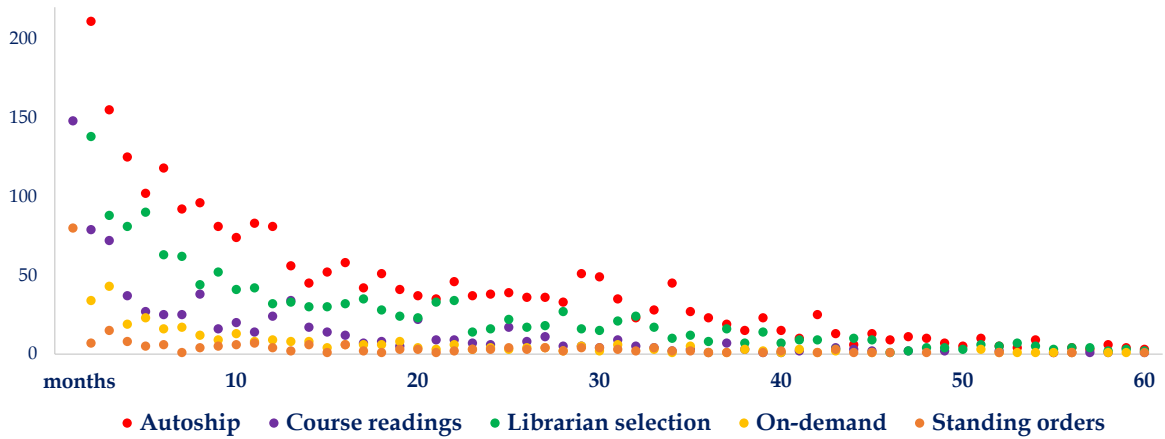


Looking at that same data by acquisition mode.

These outliers during the first month make it hard to observe the data, so I'd like to just point at them before I remove them to show you the rest.

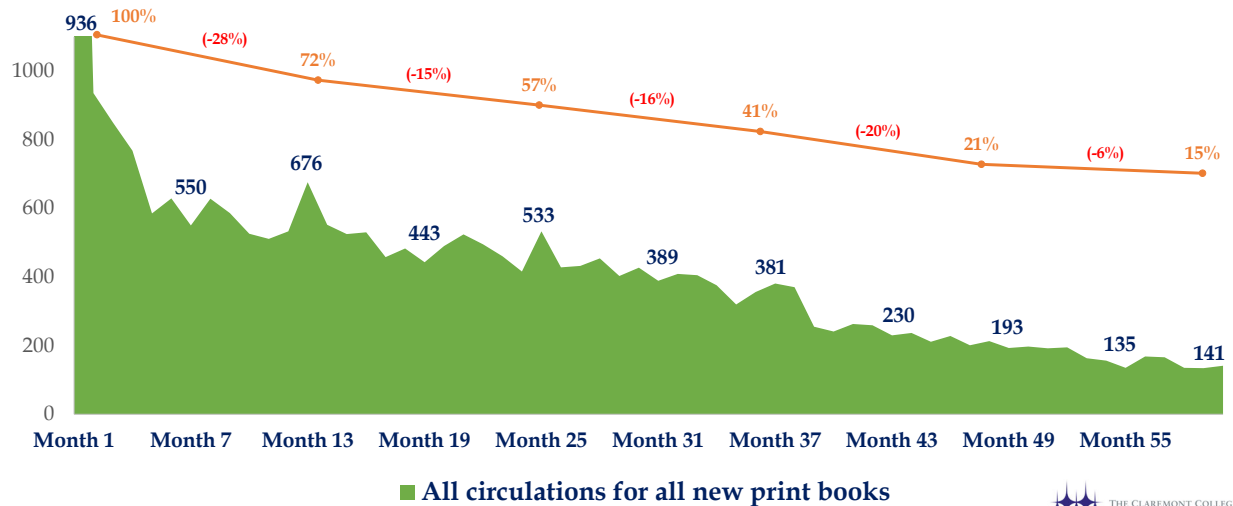
We expected to have a lot of on-demand books circulate right away, but having so many autoship and librarian selected titles circulate within the first month of purchase was a nice surprise.

Q2: How long did it take for the books to circulate for the first time – per acq. mode?



Once we remove the outliers, it is a little easier to see that the trend holds across acquisition modes. We still get a lot of first uses up until the end of year 3 and then we get a long tail of trickling down more books being discovered.

Q3: Does usage increase, decrease, or maintain steady over time?

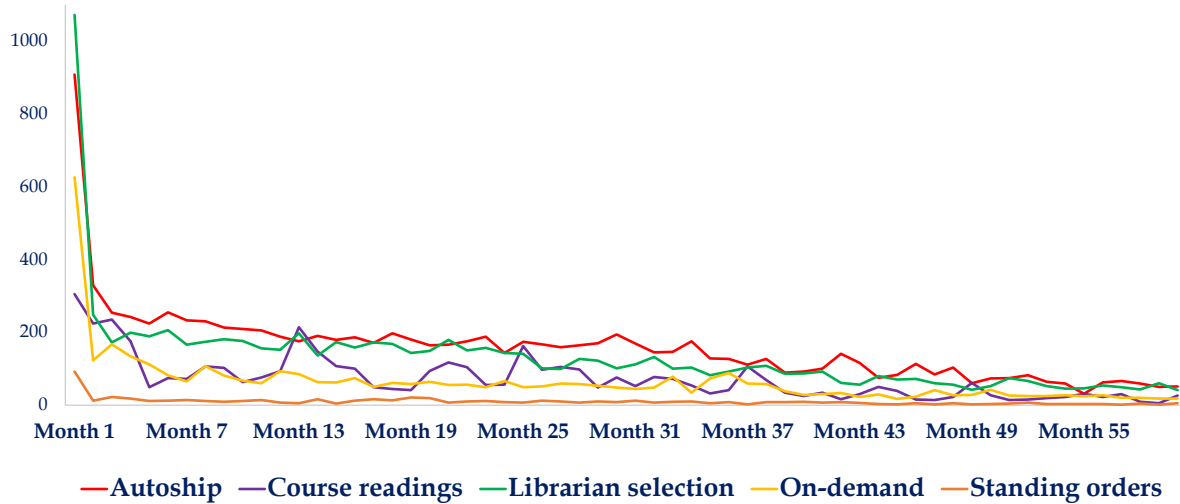


This chart shows the distribution of all circulations, not just the first one per book. We see that apart from the occasional peak, the total number of circulations declines over time.

What we found interesting was that the decline slows that as well. Between Month 1 and Month 13 the decline is 28%, then it slows down and between year 4 and year 5 there is only 6% drop.

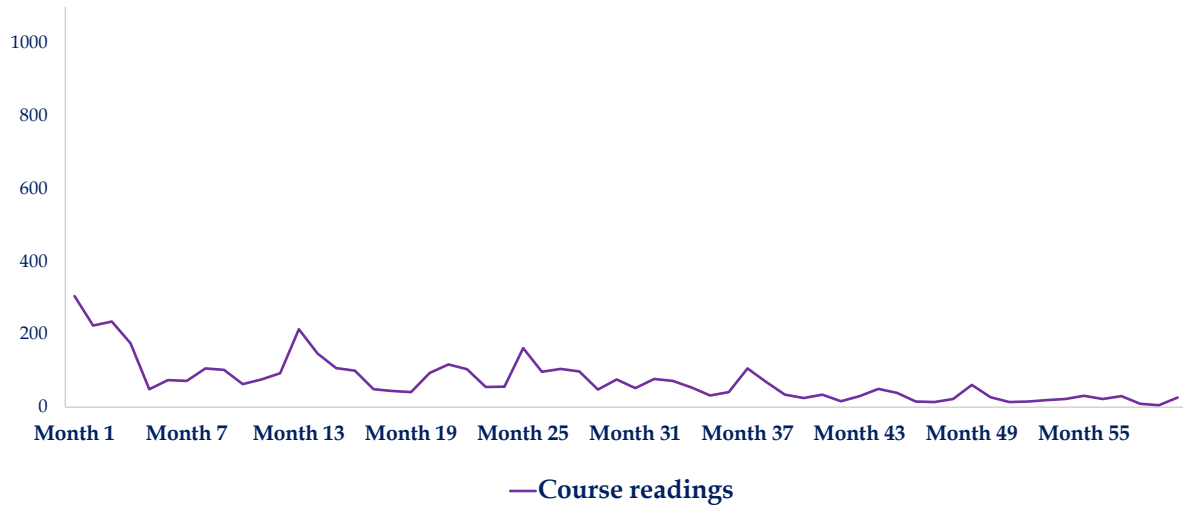
So, there is an expectation that there will be a long tail of usage continuing for a while.

Q3: Distribution of all circulations in time per acquisition mode



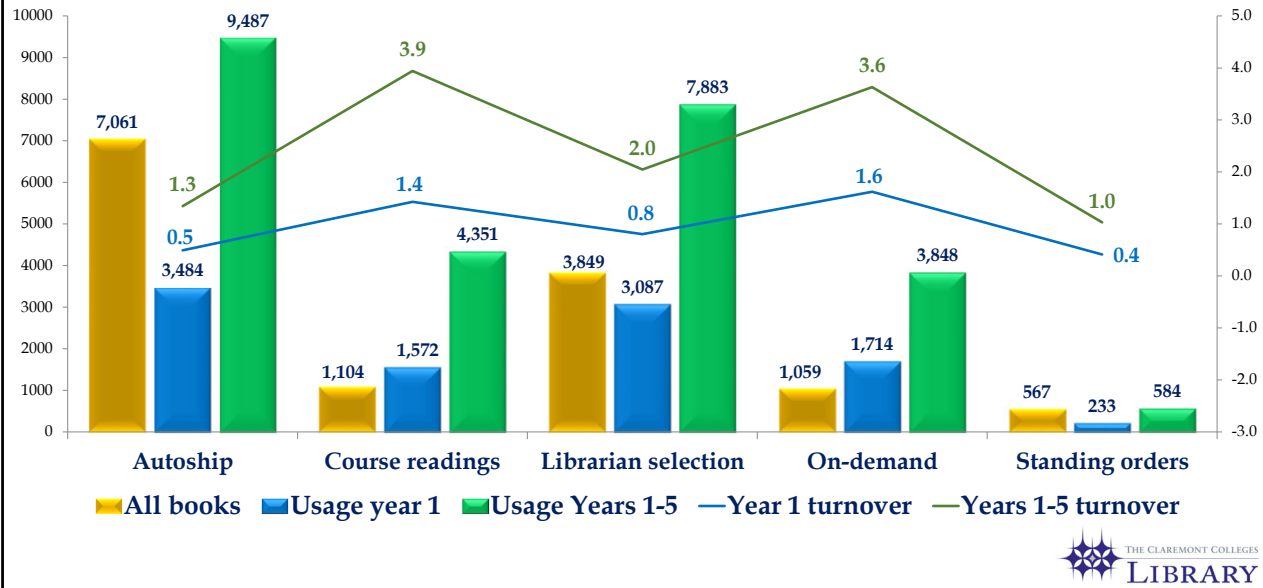
This chart breaks down the same data from the previous slide by acquisition mode and we see very similar trends - a lot of circulations in the first few months, then usage levels up and gradually decreases.

Q3: Distribution of all circulations in time per acquisition mode



If we isolated just the course readings data, we'd see it has the most peaks, most probably due to the academic year cycle affecting both when they are typically purchased as a batch and when usage peaks in the beginning of a semester. While the other acquisition modes are both purchased and used more equally across the year.

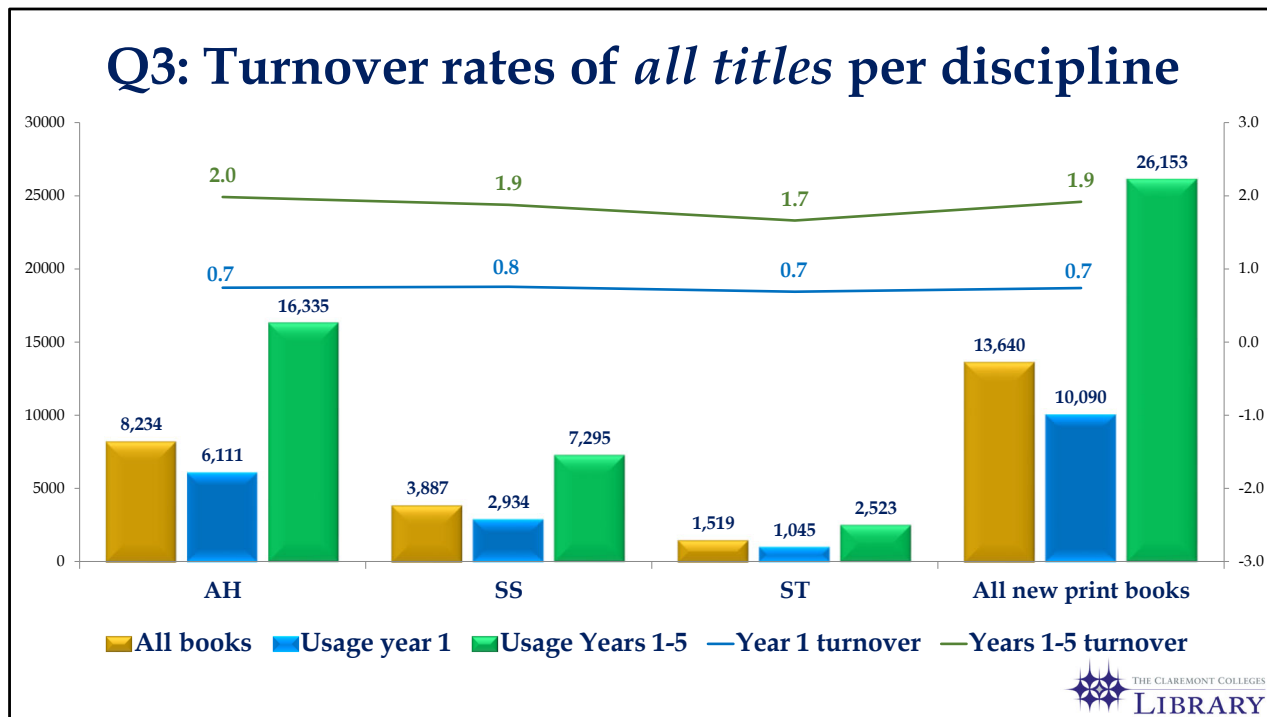
Q3: Turnover rates of *all titles* per acquisition mode



The turnover rate **puts the usage in context** by showing the average number of circulations per available title, or how **widely** titles in a group have been used. For example: just over 7000 titles purchased under approval autoship have generated close to 3500 uses in the first year. Therefore, the turnover of autoship titles in year 1 is 0.5, which means that on average each available title had circulated half times. Expanding to 5 years, the same number of available titles had 1.3 circulations per title on average.

Course readings are the clear winner with the highest turnover per purchased title - almost 4 circulations per title within the 5 years, followed closely by on-demand with 3.6.

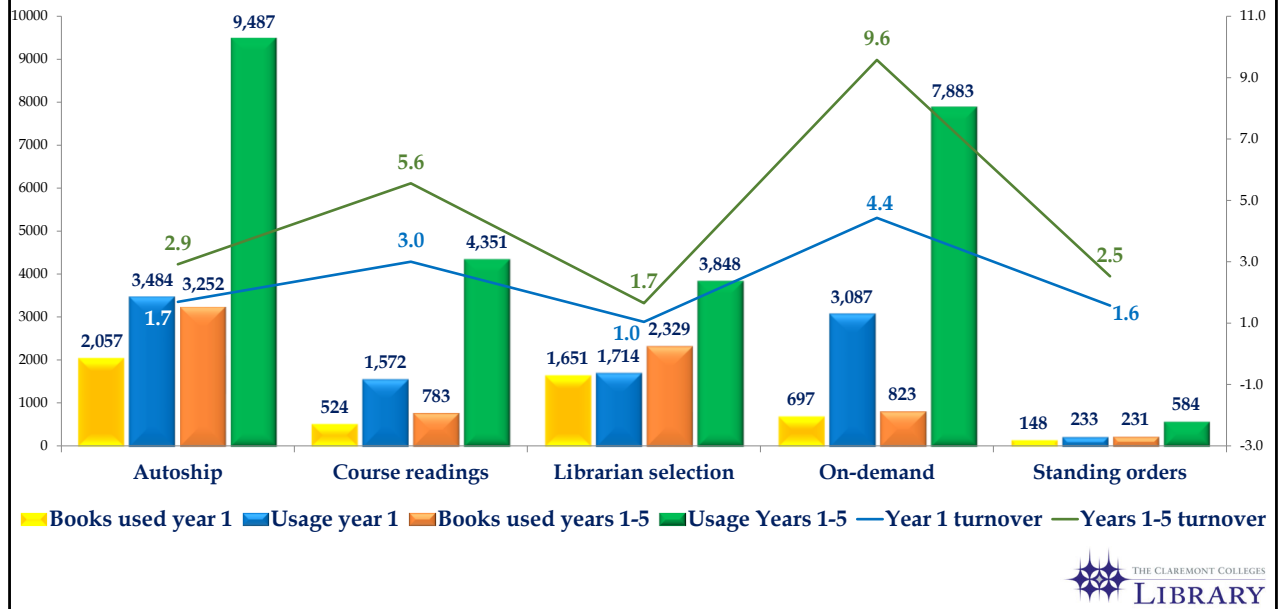
The slowing down of usage is visible here as well since the 5 year turnover is anywhere between 2.25 to 2.75 times higher than the year 1 turnover, rather than the 5 times it would have been if usage remained consistent.



Same analysis per discipline does not show notable differences. Slight preference for AH, which is not surprising.

The average turnover rate for all print books for both year 1 and 5 years aligns very closely with the Librarian selected titles (which were 0.8 and 2).

Q3: Turnover rates of *used* titles per acquisition mode

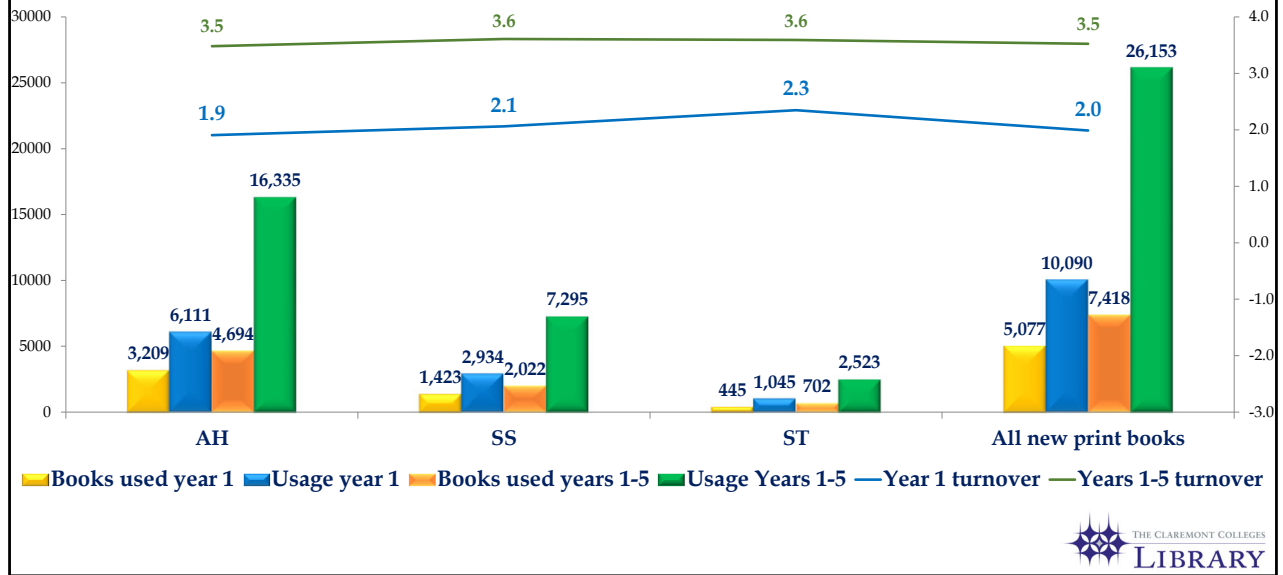


This is a different way to look at the data - if we correlated usage with only the titles that have seen use (rather than all available titles), we can calculate how **intensely** these titles have been used.

The on-demand titles for example have been used most intensely - up to an average of 10 times per title in 5 years, because the usage pertains to fewer titles.

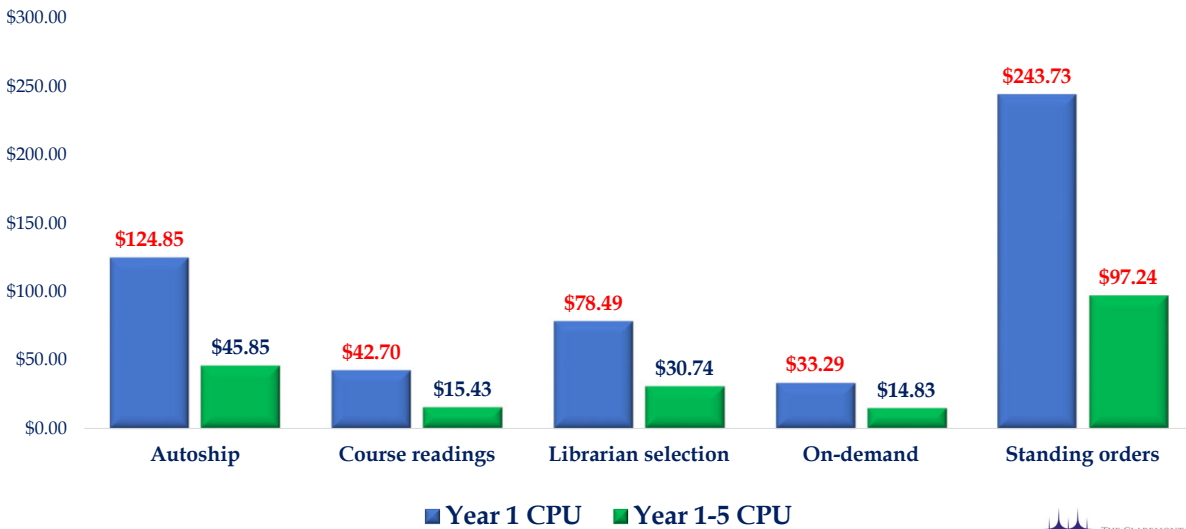
Course readings used titles have circulated at rates of 3 per title in the first year, nearly doubling to 5.6 per title in the first 5. **Librarian-selected titles however have seen wide use**, more titles have been used fewer times just once on average in the first year, up to 1.7 times in 5 years.

Q3: Turnover rates of *used* titles per discipline



Same analysis per discipline again does not show notable differences between the disciplines and this time the overall trend for all print books aligns with the per discipline trend, but not with any of the acquisition modes.

Q4: Cost per use across acquisition mode



Getting to our Q4 on CPU. Since books are paid for just once, CPU would keep decreasing for as long as the book is being used.

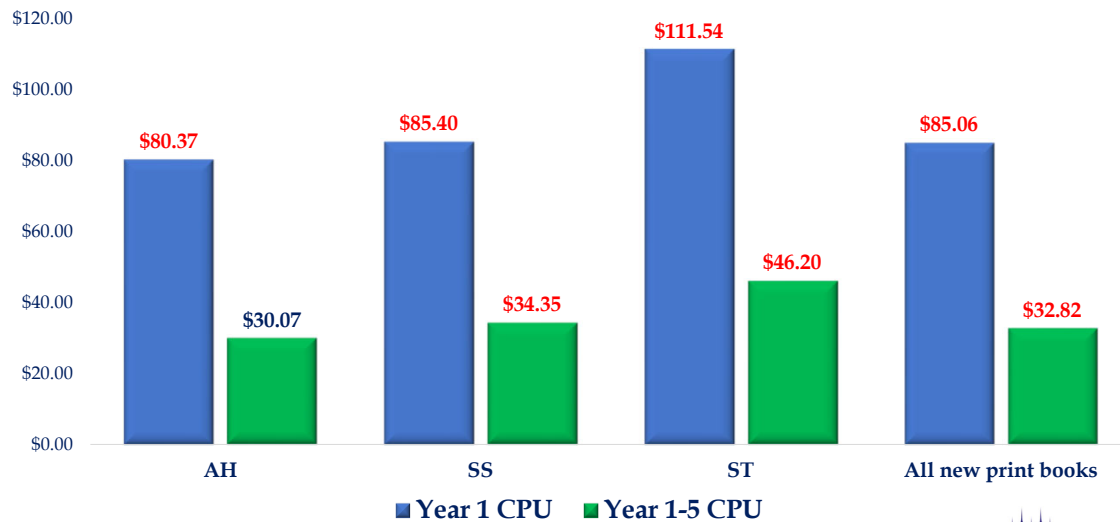
But the question is: what is a good CPU for a print book? What number are we hoping to ultimately achieve (and after how long) in order to consider our money well spent.

For context: good CPU for a journal is no more than \$25 per article; and we know it costs ~\$27-30 to borrow a print book via Resource Sharing.

Given that baseline, Course readings and on-demand titles are champions and even though the CR service requires a significant investment in both dollars and staff time, it seems to be our BEST investment.

Librarian-selected titles reach a good place after 5 years already and authorship seems to be getting there. The data for standing orders is troubling.

Q4: Cost per use across discipline



Looking at the data per discipline, it seems right, given that STEM books tend to be more expensive on average. But the overall CPU for all print titles is only slightly higher than our target and there's every expectation that for the life of these books their usage will justify the expense for acquiring them.

Some other interesting highlights

- The importance of counting soft checkouts (internal usage):
 - 9% of all usage comes from soft checkouts
 - 750 titles (10% of all titles with usage) have only soft checkouts.
- Most borrowed titles from each acquisition mode:

Acquisition mode	Checkouts	Renewals	Soft checkouts	Total usage
Course readings	94	6	1	101
Autoship	4	52	0	56
On-demand	10	29	0	39
Librarian-selected	31	8	0	39
Standing order	2	11	1	14



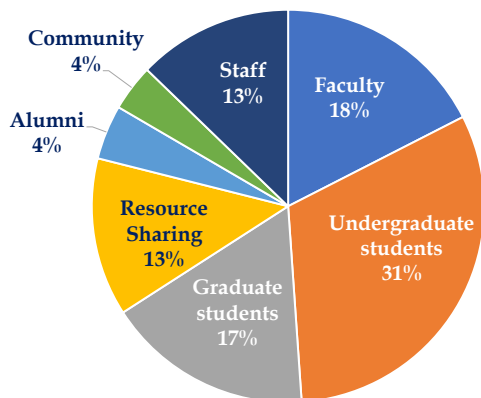
First, closer look at soft checkouts:

- 9% of all usage comes from soft checkouts. I'm so glad we have gotten better at consistently counting that.
- Especially given that 10% of all titles with usage had only soft checkouts and we could have totally missed the fact that they were used had we not been counting that. (Of course, we will never know how many books patrons are reshelving themselves, but our extensive signage and multiple reshelving carts positioned around the library must be helping.)

On the most borrowed books - not surprisingly, the most borrowed title is a textbook, It is interesting that the top autoship, on-demand, and standing order titles owe their crowns to renewals more than new checkouts.

Some other interesting highlights

- Usage per borrower type (checkouts and renewals only for the 5 years):



- Faculty, graduate students, alumni, and community members tend to **renew** books the most – at a ratio of 1.5 – 3 times per borrowed book on average
- Undergraduate students only renew at a ratio of 0.5 times per borrowed book
- Arts and Humanities books are renewed on average 0.9 times per borrowed book, Social Sciences – 0.7, STEM – only 0.4 times.



This is the distribution of checkouts and renewals among patron types. (Obviously soft checkouts are anonymous, so we can't tell who left a book on a table or a reshelving cart.)

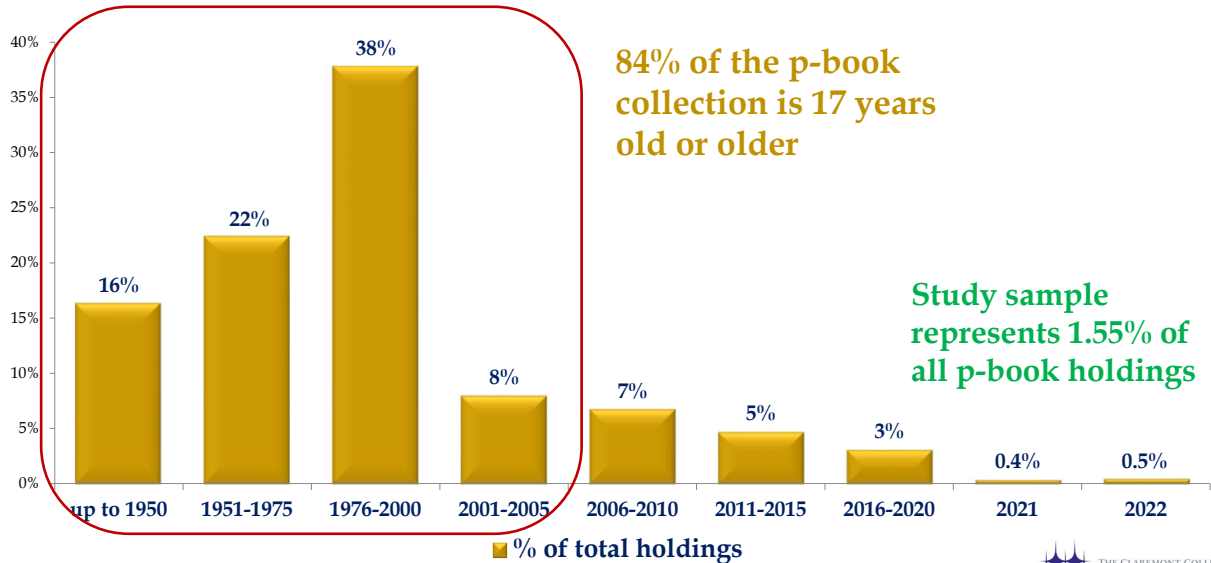
While not surprising that faculty and grad students renew books more than undergrads, it was interesting to find that the difference was 3-6 times more on average, even more notable, considering faculty and grads have longer borrowing periods to begin with.

Not as big a difference per discipline, but yes, more AH books are kept longer than the other disciplines.

ZOOM BACK OUT TO THE BIG PICTURE



Distribution of p-book holdings per publication date

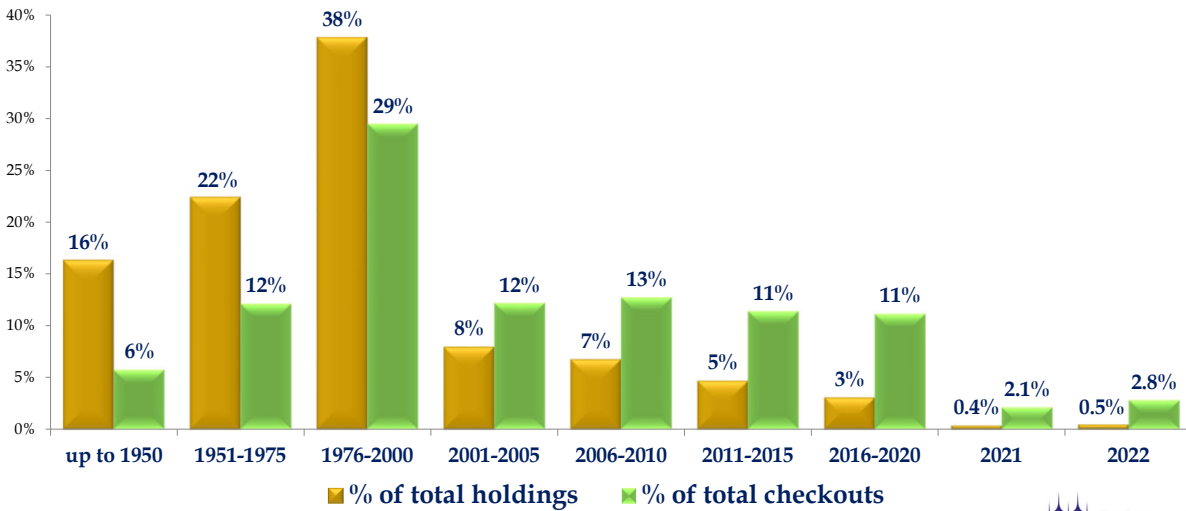


While not every title is purchased in the year it is published, those two are *usually* the same or close. So we do consider **publication year to be a good indicator as to how long the book has been in the library.**

The sample we talked about represents 1.55% of all holdings.

To put that in perspective – 84% of the collection is 17 years old or older.

Holdings vs. circulation per publication date*



*Circulation data Jan 1 - Dec 31, 2022



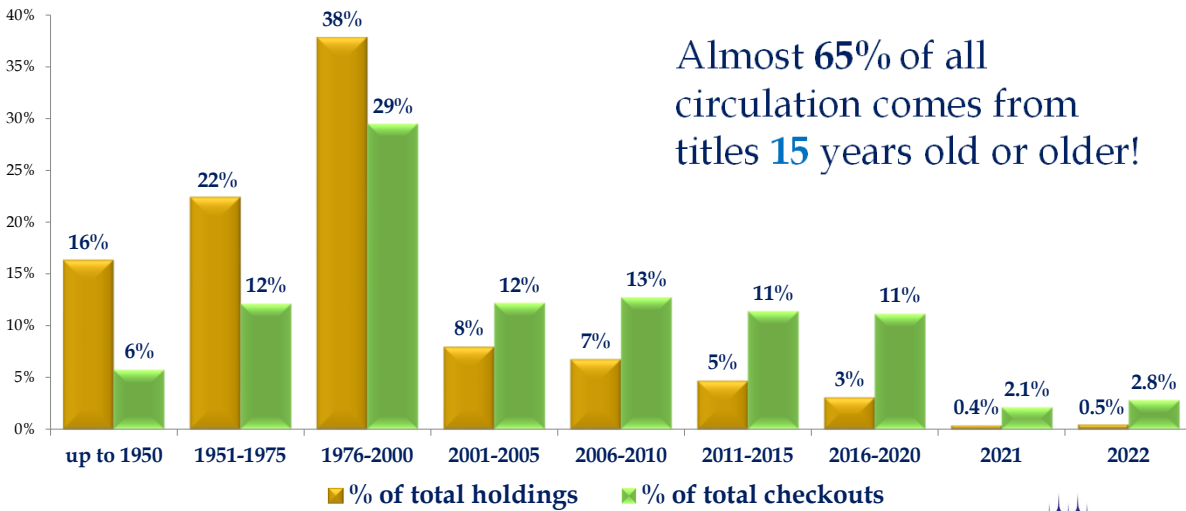
We correlated the distribution of circulations with the distribution of holdings. The yellow bars show the percentage of total holdings that were published in the specific publication period, while the green bars show what proportion of circulations belonging to these books between Jan 1 and Dec 31, 2022.

For example – pre-1950 books are 16% of all holdings but received only 6% of all circulations. On the other hand, titles published between 2011 and 2015 represent only 5% of holdings but received 11% of all circulations.

So, clearly if the green bars are higher, titles have circulated more intensely on average.

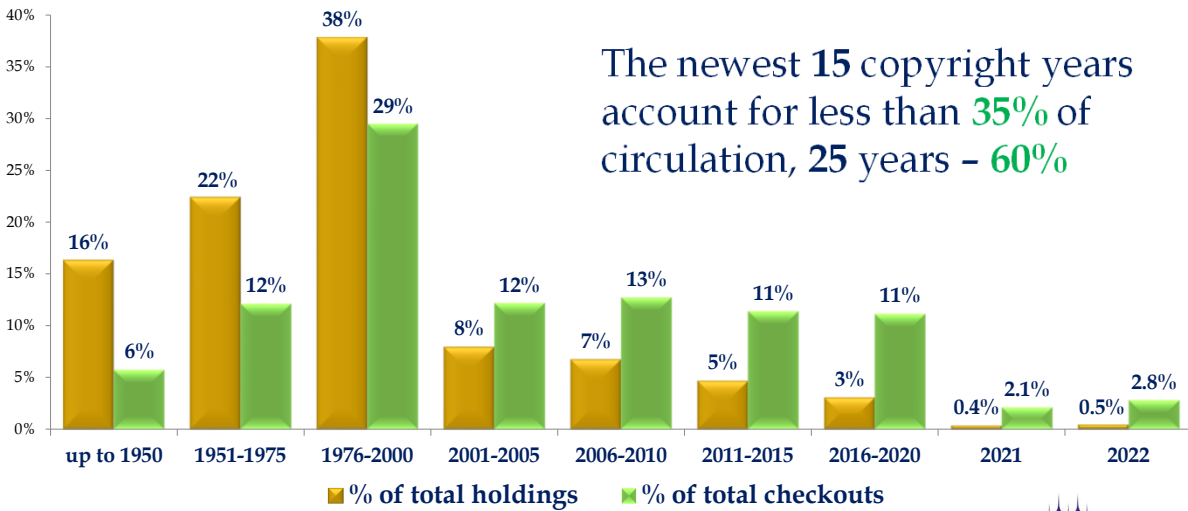
So, not surprisingly, our newer books are a hotter commodity.

How long are we willing to wait for a title to demonstrate value



That said, I'd like to talk about the significance of the number 15 in book age. It is a number that is being thrown around in libraries a lot – we look for circulations within the last 15 years, we consider titles older than 15 years for weeding or moving offside, we commit to keep books for 15 years in Shared print agreements, etc. All this to say is that 15 years seems to be the threshold beyond which a book is no longer considered new and hot. And it seems to be mostly true. However, almost 65% of all circulation comes from titles that are 15 years old or older.

When should print books be deaccessioned (or moved to storage)



The newest 15 copyright years account for less than 35% of all circulation, while the newest 25 copyright years bring us up to about 60%. Just something to think about when we plan those weeding and relocation projects.

Conclusions

- At The Claremont Colleges, p-books are important and well used resource, and many manifest value over a short or mid-term
- The study reinforced our commitment to purchase course readings and continue our focus on meeting immediate demand
- Course readings are our best short-term and mid-term investment
- There does not seem to be a need to adjust our print books acquisitions based on differences in circulation per discipline



Next steps

- Review of standing orders is already underway
- Approval plan review and revision is forthcoming
- Course readings review is underway to understand why some assigned texts are never used
- Continue analyzing p-book usage and determine how to best compare it to usage of e-books and e-journals
- Inform offside storage and weeding strategy

QUESTIONS?

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